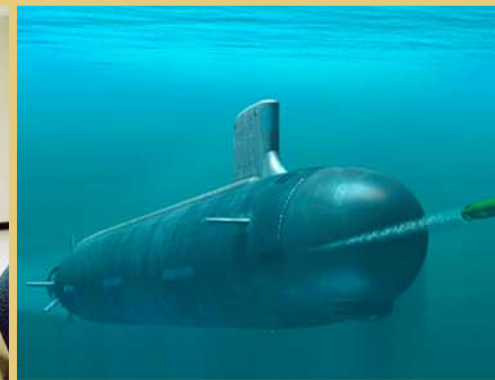




*Systems and Software Technology Conference 2006*

# Navy Open Architecture Enterprise Standards Alignment



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# Scope

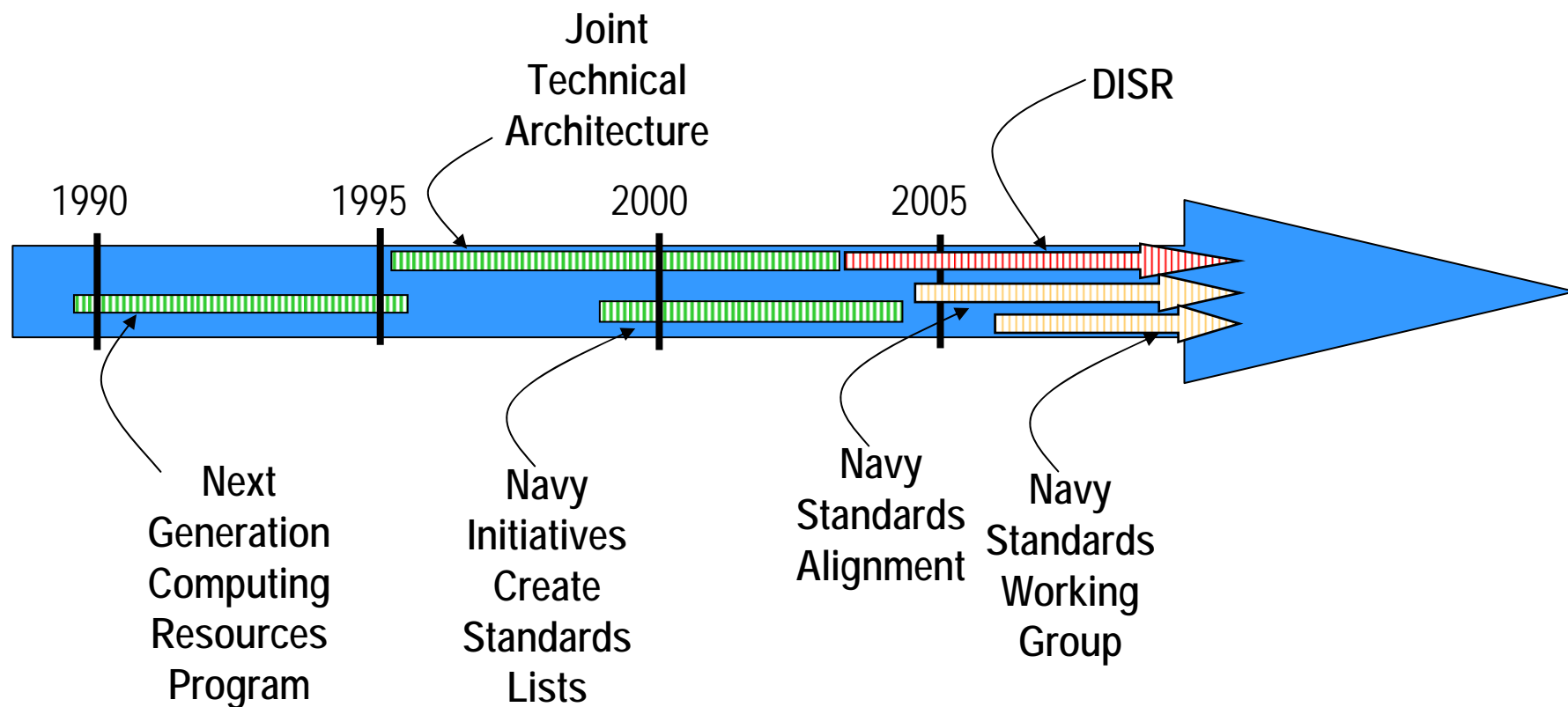
- This brief considers the Information Technology Standards used in implementing tactical Navy computer based systems
  - E.g. Information Transfer and Middleware standards
- Focus on how different Navy standards activities have been moving to align with each other to simplify what Navy Programs need to do to achieve compliance with required standards.



# Current Commercial Standards Utilization Directives

- Authority for using commercial standards and participating in commercial standards groups is authorized by the following:
  - National Technology Transfer and Advancement Act 1995 Public Law 104-113
  - OMB Circular A-119 Federal Participation in the Development and Use of Voluntary Consensus Standards and In Activities 1998
  - DoD4120.24-M Defense Standardization Program Policies and Procedures

# Standardization Timeline





# Navy IT Historical Perspective

- Prior to Acquisition Reform (early 1990's) Navy Information Technology (IT) standards were mostly Military Standards
  - Waiver required to use commercial standards
  - Supported a tactical computing infrastructure built from Navy specified computers and software
- After Acquisition Reform the Navy moved to commercial standards
  - Waiver required to use Military Standards for IT
  - Supporting a tactical computing infrastructure which includes
    - legacy Navy computers and software and
    - newer Commercial Off-The-Shelf (COTS) computing hardware and system software
  - Moved to do this quickly



# Issues in the Initial Move to Commercial Standards

- Rather than issuing standards, the Navy needed to participate in the development and maintenance activities of the industry groups
  - Time consuming process with no guarantee of success
- Many standards needs were not covered by existing commercial standards groups
- Next Generation Computing Resources (NGCR) program was a pioneering Navy effort which worked in the 1990-1996 timeframe with many lessons learned
  - The Navy should mandate *widely used, commercial* standards for its computing resources. The Navy should resist the temptation to have its own unique standards. (NRAC study conclusion)
  - Adopt vs. Adapt (NRAC study conclusion)
  - Getting capabilities documented into a standard is quite different from getting those capabilities into products



# DoD IT Standards Background

- Joint Technical Architecture (JTA) provided a large list of standards
  - Provided Mandatory Standards (TV1's), Emerging Standards (TV2's),
  - JTA was released as paper documents with versions 1.0, 2.0, 3.0, 3.1, 4.0, 5.0, and 6.0.
  - JTA 6.0 was final JTA (November 2003)
    - Introduced the notion of "Sunset Standards"
- DoD IT Standards Registry (DISR) is the follow-on to the JTA
  - DoD Information Technology Standards Council (ITSC)
    - Navy is a Participating organization
  - ITSC is working an aggressive 4 month DISR update schedule First on-line registry baseline available in 2004.
  - Toolset developed to use registry efficiently



# ITSC Structure for Managing the DISR

- Chief Information Officer Executive Board
- IT Standards Oversight Panel
- IT Standards Council (ITSC)
- Technical Working Groups (TWGs)
  - Business Area (4 TWGs)
  - DoD Intelligence Area (2 TWGs)
  - Enterprise Information Environment Area (13 TWGs)
  - War-fighting Area (6 TWGs)





# Navy IT Standardization Activities 2004/2005

- Many Navy programs had a requirement to comply with more than one IT standardization initiative
  - FORCEnet, Open Architecture (OA), DISR, ...
- The defining documents each addressed only one initiative
  - Standards are developed by individual activities
  - Each Initiative's standardization documentation was kept simple
  - Complexity of complying with multiple Standardization initiatives was expected to be borne by each Navy program
- Most initiatives provided a standards "crosswalk" comparison to the DISR
  - Inconsistencies existed
  - Different update cycles led to more inconsistencies over time



# OAET Standards Activities

- IT Standards had been identified by Domain (i.e. Air, C4I, Space, Subsurface and Surface) and used in procurements
  - e. g. Surface – Open Architecture Computing Environment (OACE)
- In November 2004, a standardization subgroup of the Open Architecture Enterprise Team (OAET) started meeting
  - Identify areas where standards commonality has the potential of enabling Enterprise application program reuse
  - Investigate approaches for alignment of standards across all domains
  - Coordinate the individual Domain standards organizations, extending into the realm of the Enterprise
- Recommended basing Enterprise and all Domain standards on the DISR
  - Needed to expand the Navy's DISR activity
- Joined in a common effort with the FORCEnet Standards group



# Standards Initiative Goals - Driver for Differences

- JTA
  - Interoperability
  - Goals expanded over time
- ITSC/DISR
  - Net-centricity & Interoperability
- FORCEnet
  - Net-centricity & Interoperability
- OA – Surface Domain (i.e. OACE)
  - Software reuse & Interoperability
- Domain specific standards needs
  - Surface Domain - Real Time Weapons Control & Safety

*Navy programs needed a unified process to ensure compliance to all of its applicable Standardization initiatives*



# Navy Standards Alignment

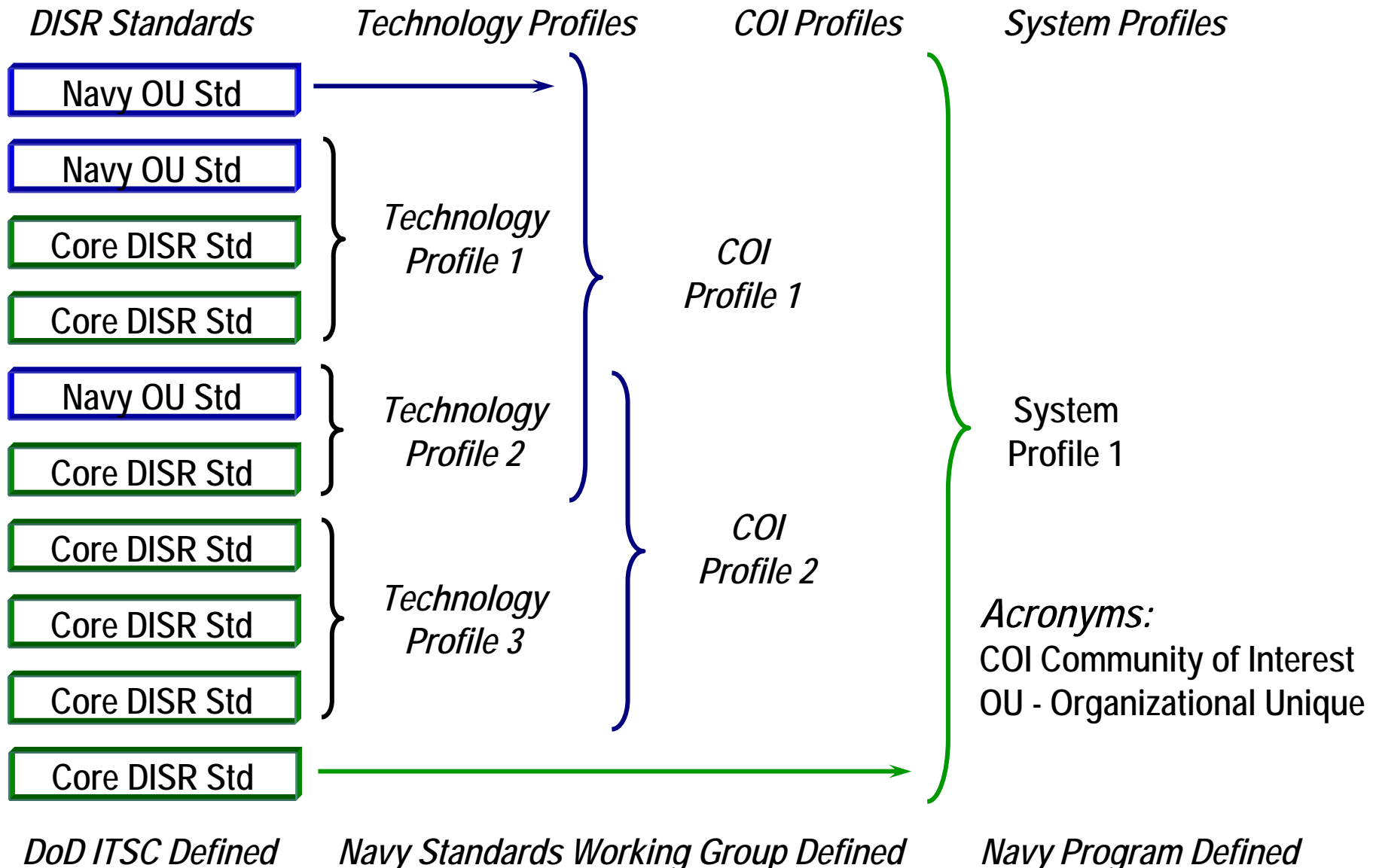
- In 2005, the OAET and FORCEnet standards alignment effort was placed under the leadership of ASN RDA CHENG
- Two activities studied how the Navy should manage their industry standards activities, both recommending the standup of a Navy Standards Working Group (NSWG)
  - FORCEnet and OA Technical Warrant Holders joint recommendation
  - A Standards Process Action Team under the FORCEnet Coordination Council



# Navy Standards Working Group (NSWG)

- NSWG to bring together the Navy Standards stakeholders to align Navy standards activities with an approach of:
  - Utilize the DISR with its Toolset as the basic standards building blocks
  - In cases where the Navy needed standards outside of the DISR Goals (e.g. software reuse), utilize a Navy “organizationally unique standards bin” accessible using the DISR toolset
  - Identify Navy Profiles of Standards identified by functionality (inherent performance domains, e.g. hard real time) versus organizational Domain (e.g. Surface)
- Focus the various Navy standards activities to directly supporting the DISR development
  - Lead to joint standards we can use
- Participants include
  - ASN RDA CHENG, Marine Corp, DoN CIO, FORCEnet CHENG, Program Executive Offices, System Commands and Supporting Activities
  - Industry will be brought in

# Notional Standards Profiles

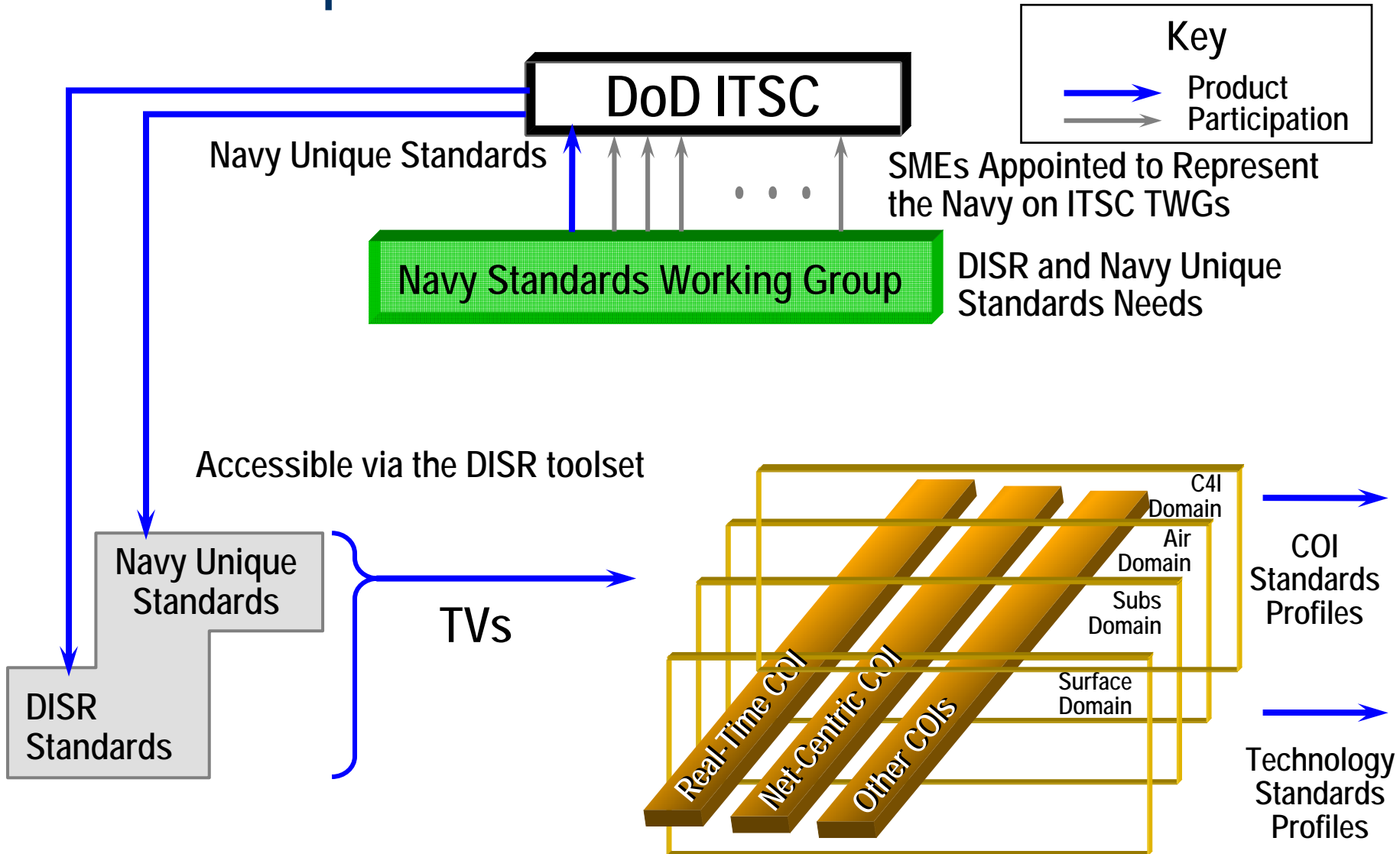




# Navy Standards Alignment Benefit

- An alignment of Joint (i.e. the DISR) and Navy standards (e.g. FORCEnet and OA efforts)
- Navy programs can have a unified process for ensuring compliance with all standards initiatives versus multiple efforts
- Participation of the Navy standards initiative communities in the ITSC working groups ensures best talent available to provide Navy inputs into the process
  - Navy involvement changes from reactive to proactive

# Relationship of the Technical Standards Efforts







# Standards Alignment Status

- Navy Standards Working Group first telecon on 27 February 2006.
  - Coordinate Navy ITSC/DISR activities cycle that began in March 2006
    - Initiate and manage the Navy's Organizational Unique (OU) Standards
  - Initiated a subgroup to identify Navy Standards Profiling needs
  - Coordinate Navy participation in the Industry Standards Groups
- This and other alignment and consolidation efforts are being pushed Navy-wide



# Acronyms

- ASN – Assistant Secretary of the Navy
- C4I - Command, Control, Communications, Computers, and Intelligence
- CHENG – Chief Engineer
- CIO – Chief Information Officer
- COI - Community of Interest
- COTS - Commercial Off-The-Shelf
- DISR - DoD IT Standards Registry
- DoD – Department of Defense
- DON – Department of the Navy
- IT – Information Technology
- ITSC - Information Technology Standards Council
- JTA - Joint Technical Architecture
- NGCR - Next Generation Computing Resources
- NRAC - Naval Research Advisory Committee
- NSWG - Navy Standards Working Group
- OA – Open Architecture
- OACE - OA Computing Environment
- OAET – OA Enterprise Team
- OMB -Office of Management and Budget
- OU – Organizationally Unique
- RDA – Research, Development and Acquisition
- TV – Technical View
- TWG – Technical Working Group